

# Bedbugs

by Leif Albertson, Extension Faculty, Health, Home and Family Development,  
and Michael Rasy, Statewide Integrated Pest Management Technician

PMC-00201

## What is a bedbug?

Bedbugs are small, wingless insects approximately  $\frac{1}{4}$  inch in size. They have a reddish-brown color and are oval shaped. While the term “bedbug” can actually refer to several different related species, in this part of the world we are most concerned with *Cimex lectularius*. These insects commonly live in blankets, mattresses, furniture, floors and walls near sleeping areas. They survive by using specialized piercing mouthparts to bite humans and feed on their blood. While they are large enough to see, they are very good at hiding in seams and crevices. They usually leave their hiding places during the night to bite sleeping victims.

Unlike many other parasites, bedbugs can be seen with the naked eye and can, therefore, be identified by anyone with a flashlight and keen eyesight.

## History

Bedbugs have been a pest to humans throughout much of recorded history. Up until the 1940s and '50s bedbugs were a common pest in American homes. Due to increases in hygiene, improved living conditions and new pesticides, rates of infestation dropped dramatically during the mid-20th century (though not in all parts of the world). In recent years there has been a nationwide resurgence in bedbug infestation. Alaska has not been immune to this trend, and health agencies across the state are receiving increasing reports of bedbug infestations.

While no one knows for certain why bedbugs are coming back, there are a few theories. An increase in travel and tourism from all parts of the world could be introducing bedbugs into our communities.



*Cimex lectularius*

Photo by Piotr Naskrecki

It is easy for travelers to unintentionally transport bedbugs in clothing or luggage. Another theory involves the change in pesticide management in the last few decades. A trend towards less toxic pesticides, and less pesticide use in general, may have contributed to the return of these insects. Additionally, bedbugs have become resistant to some modern insecticides. A third theory suggests that Americans have simply become complacent because most of the population has never had to cope with bedbugs. Americans lack the experience to identify and swiftly combat this once-common scourge.

## Signs of an Infestation

Some people suspect they have a bedbug infestation because they wake up with a rash or small bite marks. Others notice the bedbugs' small, dark droppings on their bedding or small specks of blood from bites. The only way to know for certain if you have bedbugs, however, is to locate the bugs themselves. Carefully inspect mattress edges and seams,

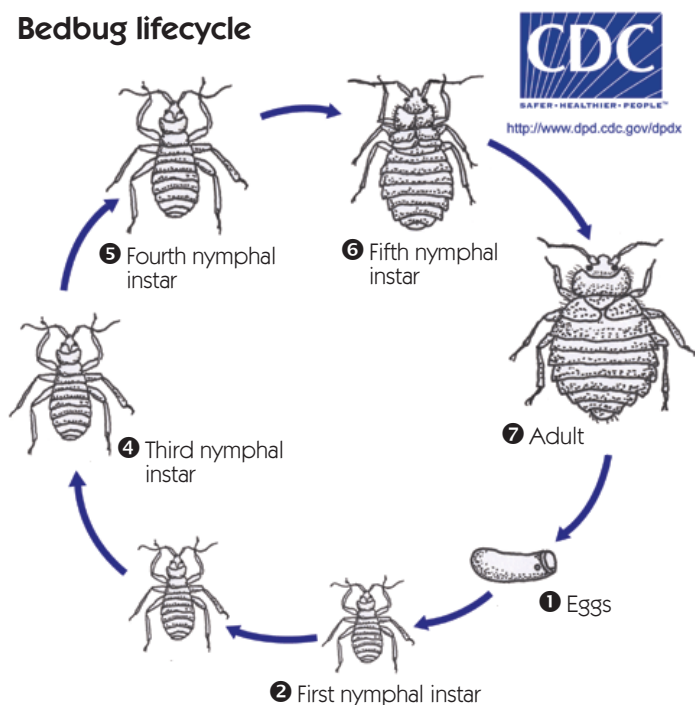
and the cracks and crevices of furniture. Since bedbugs are large enough to see, a good flashlight is all you need to identify an infestation. They are most active at night, so that is the best time to look for them. Look carefully! They often hide in small, undisturbed places like mattress and furniture seams. In some parts of Alaska, private pest-control companies may be able to provide specialized tools and expertise to detect bedbugs.

## Prevention

Bedbugs spread from one place to another by “hitchhiking” on things like clothing, luggage and furniture. Commonly, bedbugs are spread by house guests, thrift-store clothing, used furniture and used mattresses. Wash and dry used clothing at high temperatures. Inspect mattresses and furniture for insects.

Many infestations begin when travelers stay in dwellings infested with bedbugs and unwittingly carry them back to their own home. Because hotels host so many guests, they are particularly vulnerable to bedbugs. For this reason, hotel guests should be particularly wary. An inspection of hotel mattress edges and seams can alert you to signs of infestation. Bedbugs commonly hitchhike in luggage. Do not store clothes or suitcases on a hotel bed or floor. Use the closet or a luggage stand.

### Bedbug lifecycle



While a messy house doesn't cause infestations, it is important to remember that cleanliness is a critical component in control and prevention.

## Eradication

While bedbug infestations can be challenging to deal with, cleanliness is the cornerstone of bedbug eradication. Bedbugs thrive in hidden, undisturbed places, such as piles of clothes and bedding. Eliminating clutter will reduce hiding places. Additionally, using commercial caulks and sealants to fill cracks in walls near sleeping areas can also eliminate potential hiding places for bedbugs.

Washing and drying clothing and bedding at high temperatures (greater than 120°F) and vacuuming carpets will eliminate some bedbugs. Remember to discard contents of vacuum after vacuuming. Additionally, physical cleaning of seams and crevices with a brush and soapy water can dislodge bedbugs and their eggs.

One simple way to deal with an infested mattress is to use a mattress bag. These large plastic bags (sometimes called “encasements”) are available commercially. You can still sleep on the mattress, but the bag prevents any bedbugs already living in your mattress from escaping. The box spring should also be covered with an encasement. These encasements are available commercially from many large stores and start at less than \$30.

Temperature is another important weapon we have in Alaska. Bedbugs cannot survive the cold. Putting items outside in the freezing cold (less than 23°F) for several days will kill them — the colder, the better. Worried about that teddy bear? Stick him in a plastic bag and put him in the freezer for a few days.

Thermal heat treatments are another nonchemical tactic for combating infestations. Exposing bedbugs and their eggs to a temperature of 113°F for one hour will kill them. This type of treatment is best left to pest control companies with specific knowledge and equipment.

If bedbugs are not eliminated from the entire house, even a small number can recolonize all parts of a home. For this reason, it is important to eradicate bedbugs throughout the house simultaneously. While this can seem like an overwhelming project, it is the only way to ensure success. Furthermore, collaboration among tenants in multifamily housing units is necessary to successfully control bedbugs.

## What about Pesticides?

There is some debate regarding the efficacy of pesticides in controlling bedbug infestations. Increasing pesticide resistance, as well as the general tenacity of bedbugs, makes chemical control of bedbugs challenging. There are human health concerns whenever chemical poisons are used within a home, especially around children. Additionally, in many parts of Alaska, pesticides can be expensive and difficult to acquire, making them an impractical option for many families.

The use of “fogging” or aerosol insecticide sprays may actually worsen an infestation by forcing insects into other rooms. Fogging sprays rarely penetrate far enough into cracks and crevices to be effective. They will not destroy bedbug eggs.

While many pest-control experts advise that pesticides have an important role in the battle against bedbugs, chemical controls can only be effective when used in conjunction with nonchemical approaches, such as fastidious cleaning, hot-water laundry, freezing temperatures and mattress bags. Low-toxicity products such as boric acid, diato-

maceous earth and insect growth regulators may be useful for hard-to-reach places. Depending on the specifics of the situation, it is sensible to attempt nonchemical techniques before considering pesticides. Chemical pesticides are most effective in the hands of trained experts. If you *do* decide to use poisons in your home, caution should be used.

**Thoroughly read all labels and follow manufacturer’s instructions. They are there for your safety.**

If you decide to use pesticides to address a bedbug problem, here are some useful guidelines from the Environmental Protection Agency ([www.epa.gov/bedbugs](http://www.epa.gov/bedbugs)):

- Never use a pesticide indoors that is intended for outdoor use. It is very dangerous and won’t solve your bedbug problem.
- Using the wrong pesticide or using it incorrectly to treat for bedbugs can make you sick, may not solve the problem and could even make it worse by causing the bedbugs to hide where the pesticide won’t reach them.
- Check if the product is effective against bedbugs — if a pest isn’t listed on the product label, the pesticide has not been tested on that pest and it may not be effective. Don’t use a product or allow a pest control operator to treat your home unless bedbugs are named on the product label.
- Before using any pesticide product, READ THE LABEL FIRST, then follow the directions for use.
- Keep in mind that any pesticide product without an EPA registration number has not been reviewed by EPA, so it hasn’t determined how well the product works.

**Bedbugs are a frustrating problem for many Alaskans, but they can be eradicated by applying proven, evidence-based strategies. For more information, contact your local Cooperative Extension Service office.**

## References

- Alaska Department of Environmental Conservation,  
Division of Environmental Health, Pesticide  
Control Program:  
<http://dec.alaska.gov/eh/pest/>
- Anderson, Alice, M.S., Ph.D. and Korin Leffler.  
2008. "Bedbug Infestations in the News: A Pic-  
ture of an Emerging Public Health Problem in  
the United States." *Journal of Environmental  
Health* 70(9). Retrieved April 2011 from [www.  
neha-ecommerce.org/imispublic/members/pdf/  
JEH/archive/2008/4.May.08/JEH5.08\\_Feature\\_  
Bedbugs.pdf](http://www.neha-ecommerce.org/imispublic/members/pdf/JEH/archive/2008/4.May.08/JEH5.08_Feature_Bedbugs.pdf).
- "Bed Bug Information." U.S. Environmental Pro-  
tection Agency:  
[www.epa.gov/bedbugs/](http://www.epa.gov/bedbugs/)
- "Joint Statement on Bed Bug Control in the United  
States." U.S. Centers for Disease Control and  
Prevention (CDC) and the U.S. Environmental  
Protection Agency (EPA). Updated February  
2011.  
[www.cdc.gov/nceh/ehs/Publications/Bed\\_Bugs\\_  
CDC-EPA\\_Statement.htm](http://www.cdc.gov/nceh/ehs/Publications/Bed_Bugs_CDC-EPA_Statement.htm)
- Pinto, L.J., R. Cooper and S.K. Kraft. 2007. *Bed  
Bug Handbook: The Complete Guide to Bed  
Bugs and Their Control*, 1st edition. Mechanics-  
ville, Maryland: Pinto & Associates, Inc.
- Romero, Alavaro, Michael F. Potter, Daniel A. Pot-  
ter and Kenneth F. Haynes. 2007. "Insecticide  
Resistance in the Bed Bug: A Factor in the  
Pest's Sudden Resurgence?" *Journal of Medical  
Entomology* 44(2): 175–178.

*For more information, contact your local Cooperative Extension Service office or Leif Albertson, Extension Faculty, Health, Home and Family Development, at 907-543-4553 or [lealbertson@alaska.edu](mailto:lealbertson@alaska.edu). This publication was reviewed by Janice Chumley, IPM Technician; Jennifer Dobson, Environmental Health Services Manager; Yukon-Kuskokwim Health Corporation, Office of Environmental Health and Engineering; and J. Bruce Gazaway, Environmental Health Specialist, Anchorage Department of Health and Human Services.*

**Visit the Cooperative Extension Service website at  
[www.uaf.edu/ces](http://www.uaf.edu/ces) or call 1-877-520-5211**